17 June 2010 Brooks McCall_Status Report, Cruise 8 - Day 1
Complied by: Leigh Stevens, Wriggle Coastal Management (for BP)

A number of science staff rotated off RV Brooks McCall following completion of Cruise 7. Several returning staff slotted back in seamlessly. Two new NOAA appointments, who had not been fully briefed prior to joining the vessel, required guidance on data management and sample tracking roles. Weather conditions were ideal, with negligible winds and flat, calm seas. Gas and oil flaring was taking place on the Q4000 direct, and lightering of the Enterprise Explorer.

A total of 3 CTD casts were completed, as summarized below and shown in the figure (over page).

Station	Position from wellhead	Fluorescence signal	Signal depth	Comment
BM88	1 km S - 180^{o}	No signal	-	No significant surface oil present.
BM89	2 km W - 270^{o}	No signal	-	Light sheen on surface.
BM90	2 km E - 90^{o}	Very weak	1060m 1110m	Signal marginally distinguishable from background and in narrow bands (10-20m). Relatively heavy surface oiling.

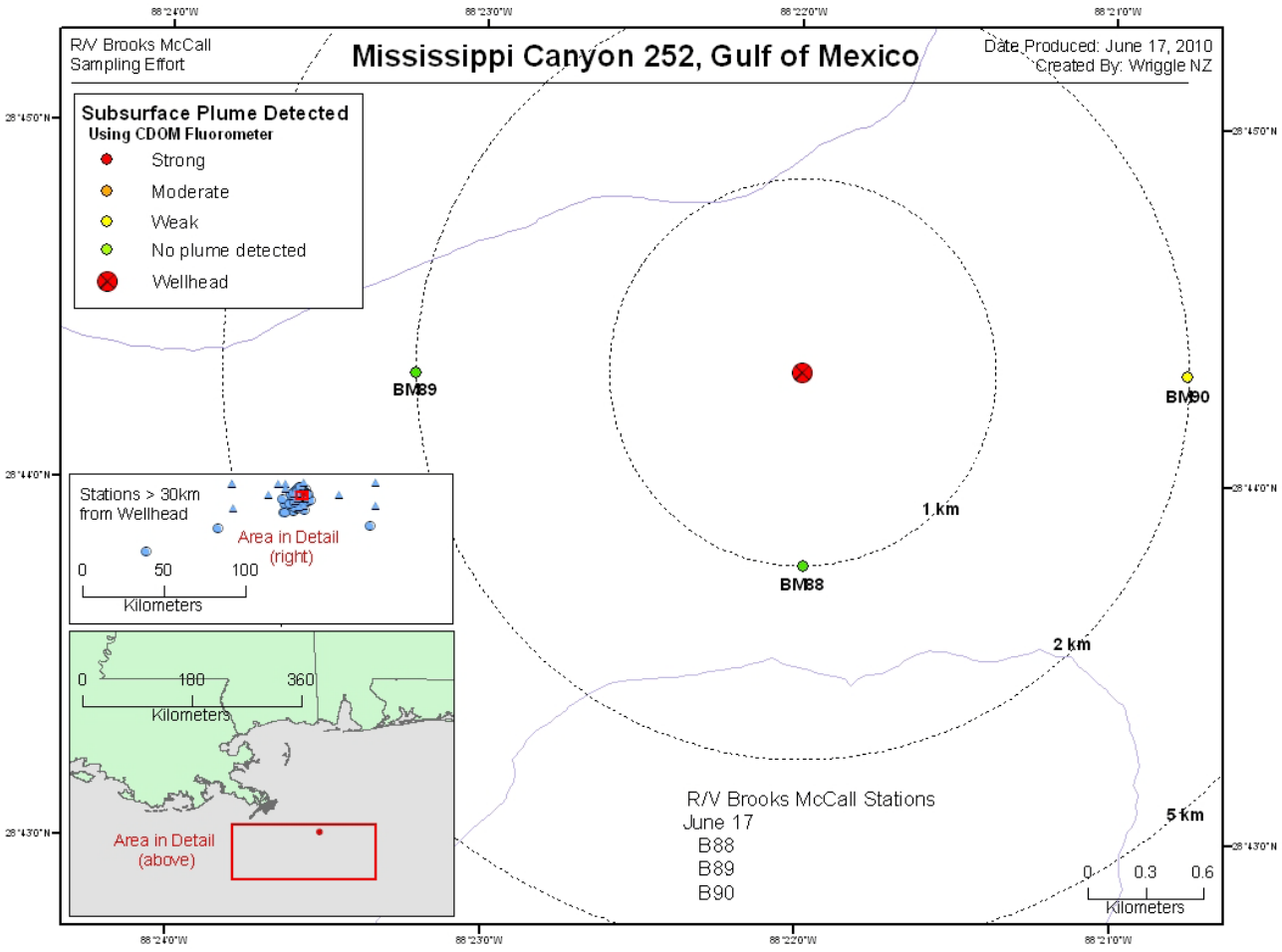
The subsurface plume was expected to be located north of the wellhead based on predicted northerly current flows and the tracking of the plume in the north by the RV Ocean Veritas yesterday. Our proposed sampling program sought to confirm the absence of the plume in the south, west and east, before trying to again locate it in the north. Approval was granted to sample 1km south of the well and BM88 was deployed after arriving on station at 08.45. During the upcast SIMOPS requested us to move from the area and sample no closer that 2km from the Discoverer Enterprise. The sampling program was modified accordingly and cast BM89 was located 2km west of the wellhead.

Cast BM90 was planned for 2 km due north, however this was abandoned while approaching the site through heavy surface oiling when a single spiked VOC reading was recorded. VOC readings on deck were consistently below 5ppm. However, when the VOC meter was held 0.5m off the sea surface above fresh oil (and gas?) bubbling to the sea surface, the VOC alarm sounded. The vessel moved from the site and staff were kept inside while further VOC readings were taken. On deck readings fluctuated predominantly between 0 and 2ppm. Elevated readings (peaking at 8ppm, but mostly below 5ppm) were recorded under the roof to the stern entrance door for 8 minutes immediately after the spiked reading was recorded, before dropping to below 2ppm. Readings in the laboratory adjacent to this area reached a maximum of 2.3ppm, indicating safe working conditions. The vessel repositioned 2km due east of the wellhead for cast BM90 at 14.50h. VOC readings on deck were 0ppm, despite heavy surface oiling. Light rain was falling and a light breeze blowing.

Casts BM88 and BM89 both returned similar profiles with no fluorescence signal detected indicating the plume was not present south or west of the wellhead. Small decreases in DO were evident across narrow depth bands (10-20m) between 900 and 1100m. These were sampled. To the east, BM90 showed a very weak fluorescence signal that was only just discernible from background values at 2 depths – 1060m and 1110m, each associated with a DO drop. An additional dip in DO at 880m was not associated with a fluorescence signal. DO levels remained well above 2mg/l. The CTD output figure reported in the daily deliverables for BM90 is in 2 parts due to an interruption in the signal. This interruption did not affect the data collection. The very weak fluorescence signals and LISST data indicate the very edge of the plume at this location.

The results indicate the plume was absent in the south and west, and was just detectable in the east. Sampling tomorrow will seek to delineate the plume in the north starting around the 5km mark. As this area currently has relatively heavy surface oiling and associated oil recovery activity, final sampling sites will be determined following a safety assessment in the morning.

Rototox tests were started today for samples BM87 - 90. BM87 is the final sample from Cruise 7 to be tested, the delay due to failed hatching of rotifers. Results will be reported on 18 June, 2010.


R/V Brooks McCall
Sampling Effort
Mississippi Canyon 252, Gulf of Mexico
Date Produced: June 17, 2010
Created By: Wriggle NZ
Subsurface Plume Detected
Using CDOM Fluorometer
Strong
Moderate
Weak
No plume detected
Wellhead
BM89
BM90
BM88
1 km
2 km
5 km
Stations > 30km
from Wellhead
Area in Detail
(right)
0
50
100
Kilometers
0
180
360
Kilometers
Area in Detail
(above)
R/V Brooks McCall Stations
June 17
B88
B89
B90
0
0.3
0.6
Kilometers
88°24'0"W
88°23'0"W
88°22'0"W
88°21'0"W
28°45'0"N
28°44'0"N
28°43'0"N